

GENETIC ASSAY FOR PROTEIN NUCLEAR TRANSPORT

ABSTRACT OF THE DISCLOSURE

The invention provides methods of determining the
5 presence of a nuclear localization signal and/or the
presence of a nuclear export signal in a protein of
interest. The invention further provides chimeric
nucleic acids and recombinant host cells for use in such
methods. Additionally provided is a nucleic acid
10 molecule encoding a modified LexA protein, wherein the
modified LexA protein has no nuclear localization signal,
as well as the modified LexA protein itself. In the
nuclear import assay, if a protein of interest fused to a
mLexA-Gal4AD hybrid contains a functional NLS, the fusion
15 product will enter the yeast cell nucleus and activate
the expression of reporter genes. In the nuclear export
assay, if a protein of interest fused to a mLexA-SV40
NLS-Gal4AD hybrid contains a functional NES, the fusion
product localized to the cell nucleus will exit into the
20 cytoplasm, decreasing the reporter gene expression
levels.

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